

9. PERSONAL PROTECTIVE EQUIPMENT

The cold test pit sites pose low to moderate potential hazards to personnel from construction, operation, and maintenance activities. Anyone entering the cold test pit must be protected against these potential hazards. The purpose of PPE will be to shield or isolate personnel from chemical, physical, or biological hazards that cannot be eliminated through engineering or other controls and may be encountered at the cold test pit sites. It is important to realize that no PPE ensemble can protect against all hazards under all conditions and that work practices and adequate training will also provide a greater level of protection to workers.

Selection of the proper PPE to protect cold test pit site personnel from the following hazards will be specified by the IH in work control documentation:

- Local and systemic toxicity of contaminants
- Anticipated exposure levels (i.e., surface and airborne)
- Hazard evaluation (see Section 8).

The PPE will be generally divided into two broad categories: (1) respiratory protective equipment and (2) personal protective clothing. Both of these categories are incorporated into the standard four levels of protection (i.e., Levels A, B, C, and D) based on the potential severity of cold test pit project hazards. Guidance in the selection process for respiratory and protective clothing is presented in Table 9. Cold test pit site-specific hazards and contaminants will be evaluated in determining the most appropriate PPE level and modifications.

9.1 Respiratory Protection

Several of the test chemicals used at the cold test pit present a potential respiratory hazard if released in an airborne respirable form. Section 8 and Table 6 presented the contaminants and exposure potential based on the tasks to be completed, amount and form of hazardous constituents, engineering controls that will be implemented, and containerized nature of core retrieved material. This evaluation concluded that the primary potential respiratory hazards would be from airborne dust or mixing of test chemicals. Therefore, respiratory protection will not, under most conditions, be required for this project, based on the low potential of respiratory hazards.

9.2 Personal Protective Equipment Levels

The PPE that will be used at the work site will be selected based on the toxicity, routes of entry, physical form of contaminant, anticipated levels of known test chemicals and agents at the work site, recommendations contained in NIOSH (1985), and the hazard evaluation in Section 8.

Based on the hazard evaluation and the recommendations cited above, the most common PPE used will be Level D. The safety engineer and IH will determine whether the level of PPE should be upgraded to modified Level D or Level C and will indicate this level on the work control documents.

The following sections provide detail and explanation of the two most likely levels of PPE. Modifications to these levels will be made under the direction of the HSO in consultation with the project IH and safety engineer as appropriate. The HSO, IH, and safety engineer will determine when modifications to the PPE levels are needed. Required task-based protective clothing is listed as a contingency in Tables 11 and 12.

Table 11. Personal protective clothing selection.

Personal Protective Clothing Selection	
Hazard	Level of Personal Protective Equipment
Low atmospheric contaminant levels that are present under stable conditions. No anticipated immersion, splashes, or potential for unexpected contact with chemical contaminants.	Level D
Moderate atmospheric contaminants under relatively stable conditions, liquid splashes, or other direct contact that do not have corrosive characteristics or can be absorbed by exposed skin.	Level C

Personnel must inspect all PPE before donning and entry into any work zone. Items found to be defective or that become unserviceable during use will be doffed and disposed of in accordance with posted procedures and placed into the appropriate waste stream. The PPE inspection guidance is provided in Section 9.4.

9.2.1 Level D Personal Protective Equipment

Level D PPE affords little protection against chemical hazards. Level D will be appropriate for use when personnel are not expected to be exposed to hazardous chemicals above an allowable limit and no danger exists because of absorption of chemicals through the skin. Level D is basically a standard work uniform. This level of PPE at the work site consists of the following:

- Street clothes and coveralls as required by the IH and safety engineer
- Hard hat
- Eye protection (i.e., safety glasses with side shields)
- Approved safety footwear as specified by the safety engineer.

Optional Level D modifications consist of the following:

- Chemical protective clothing (e.g., Tyvek and Saranex) as prescribed in the task-specific work control documents
- Chemically resistant hand and foot protection (e.g., inner or outer gloves and boot liners)
- Any specialized protective equipment (e.g., hearing protection, cryogenic gloves, face shields, and aprons).

9.2.2 Level C Personal Protective Equipment

Level C PPE may be simulated for some tasks. Level C PPE will be appropriate for use at the work site. When the contaminants are well characterized, the hazard exposure to personnel via skin absorption are minimal and the threat is very small that an immediately dangerous-to-life-or-health condition will develop. Personnel working at the work site and wearing Level C PPE will wear the following:

- TYVEK or cloth coveralls
- Chemical-resistant (e.g., rubber and nitrile) outer shoe and boot cover

- Approved safety foot wear as specified by the safety engineer
- Inner gloves (e.g., rubber and nitrile)
- Outer gloves (e.g., nitrile and rubber)
- Hard hat
- Eye protection (i.e., safety glasses with side shields).

The user will inspect the PPE before donning it and before entry into the exclusion zone. Items found to be defective will not be used.

9.3 Protective Clothing Upgrading and Downgrading

The cold test pit project HSO in consultation with the project IH and safety engineer personnel will be responsible for determining when to upgrade or downgrade PPE requirements. Upgrading or downgrading PPE requirements based on current conditions is a normal occurrence. The ALs listed on Table 7 provide the basis for determining such decisions.

Note: Before upgrade or downgrade of any PPE, the IH, safety engineer, and HSO will be consulted.

Additional reasons for upgrading or downgrading PPE are listed below.

- Upgrading criteria (work will stop immediately if PPE upgrading will be required):
 - Unstable or unpredictable site nonradiological hazards
 - Contaminants that present difficulty in monitoring or detecting
 - Known or suspected presence of skin absorption hazards
 - Temporary loss or failure of any engineering controls
 - Identified source or potential source of a respiratory hazard
 - Change in the task procedure that may result in an increased contact with contaminants or meeting any of the criteria listed above.
- Downgrading criteria:
 - New information or monitoring data that shows the contaminant levels to be lower than established action limits
 - Implementation of new engineering or administrative controls that eliminate or significantly mitigate hazards
 - Elimination of potential skin absorption or contact hazards
 - Change in site conditions that results in removal of physical hazards or reduces or isolates them to a controlled area
 - Completion or change in tasks that results in the elimination of key hazards that require higher levels of PPE.

9.4 Inspection of Personal Protective Equipment

All PPE ensemble components must be inspected prior to use and when in use within cold test pit project work zones. Self-inspection and the use of the buddy system once PPE is donned will serve as the principal forms of inspection. If at any time PPE should become damaged or degraded, the worker will inform others of the problem and proceed directly to the work zone exit point to doff and replace the unserviceable equipment. Additionally, all PPE that becomes grossly contaminated or presents a potential source for the spread of such contamination will require decontamination or replacement. An inspection checklist for common PPE items is provided in Table 12.

Table 12. Personal protection equipment inspection checklist.

Personal Protection Equipment Item	Inspection
Rubber gloves	Before use: <ul style="list-style-type: none">• Pressurize gloves to check for pinholes: blow in the glove, then roll until air is trapped and inspect. No air should escape.
Levels D and C	Before use: <ul style="list-style-type: none">• Visually inspect for imperfect seams, nonuniform coatings, and tears. Hold personal protective equipment (PPE) up to the light and inspect for pinholes, deterioration, stiffness, and cracks. While wearing PPE in the work zone: <ul style="list-style-type: none">• Check for evidence of chemical attack such as discoloration, swelling, softening and material degradation. Inspect for tears, punctures, and zipper or seam damage. Check all taped areas to ensure that they are still intact.

10. DECONTAMINATION PROCEDURES

No known radionuclides are present at the cold test pits. The chemicals used are a minor hazard and do not pose significant contamination concerns. No decontamination procedures apply to the work in this HASP other than those that would be determined by the project IH, should a situation requiring such procedures arise.

Decontamination procedures are contained in the project-specific HASP and would only be simulated to provide the required training elements.

11. EMERGENCY RESPONSE PLAN FOR COLD TEST PIT SITES

This section defines the responsibilities of the cold test pits and the INEEL ERO by providing an emergency response plan for guidance in responding to abnormal events during treatability studies activities.

The emergency response plan addresses OSHA emergency response as defined by the HAZWOPER standard (29 CFR 1910.120 and 1926.65); DOE emergencies as defined by DOE Order 151.1A, "Comprehensive Emergency Management System," and DOE Order 232.1A, "Occurrence Reporting and Processing of Operations Information." The emergency response plan will be implemented in concert with Companywide Manual 16, *INEEL Emergency Plan/RCRA Contingency Plan-Emergency Plan/RCRA Contingency Plan* (PLN-114).

The INEEL Emergency Plan may be activated in response to events occurring at cold test pit sites, or at the discretion of the emergency coordinator. Once the INEEL Emergency Plan is activated, project personnel will follow the direction and guidance communicated by the emergency coordinator.

Note: The OSHA does not define "emergency" the same as DOE. For simplicity, the term "emergency" is used in this section of the HASP to refer to events covered by either the OSHA or the DOE definition.

This section provides the following emergency response instructions for cold test pit task-site personnel:

- Emergency warning signals and evacuation routes
- Personnel accountability procedures
- Emergency medical services and fire, rescue, and HAZMAT emergency response
- Task-site emergency communications
- Emergency equipment and supplies located at the task site
- Notification procedures for emergency response to the task site.

The cold test pit work tasks do not produce risks that could reasonably be expected to cause an emergency evacuation. Task-site personnel could be affected by an emergency event at an INEEL facility such as the nearby RWMC.

All emergencies will be reported through the RWMC shift supervisor or the facility manager to ERO personnel for classification in accordance with Section 4 of the INEEL Emergency Plan. If a facility ERO is activated, task-site emergency response will follow the INEEL Emergency Plan.

Response to and mitigation of task-site emergencies will require the expertise of both task-site personnel and INEEL emergency response personnel. Emergencies that could occur include the following:

- Accidents resulting in injury
- Accidents resulting in chemical exposure of personnel

- Fires
- Explosions
- Spills of hazardous materials
- Tornadoes, earthquakes, and other adverse natural phenomena
- Vehicle or transportation emergencies
- Emergencies at nearby facilities or wildfires that could prompt evacuation or take-cover actions at the task site.

11.1 Types of Emergency Events

This HASP addresses three types of emergency events, as described in the following sections.

11.1.1 Events Requiring Emergency Notifications But No Evacuation

Certain events require courtesy notifications but do not require a response from the INEEL ERO. In these cases the individual treatability study FTL or designee will immediately notify the RWMC shift supervisor, the Warning Communications Center (WCC), INEEL subcontractor project and department personnel, DOE, and other appropriate parties as listed in Section 11.8. The FTL notification should describe the event and state that no emergency response support is required. Examples of these types of events include but are not limited to the following:

- Personal injury at the site that requires medical evaluation or treatment but does not require an ambulance response
- Personnel contamination or suspected uptake of a hazardous substance not requiring emergency medical treatment
- Equipment or vehicle accident that results in damage to the vehicle or property ONLY
- A small fire that can be controlled with a hand-held fire extinguisher (all fires must be reported to the INEEL Fire Department)
- Any spill as defined by MCP-3480, "Environmental Instructions for Facilities, Materials, and Equipment"
- Any other event deemed potentially reportable.

11.1.2 Events Requiring Cold Test Pit Evacuation or Emergency Response Organization Response

Some events that could occur at the project or the RWMC may require support from the RWMC ERO or may require a local area evacuation of the project. In these cases, the project FTL or designee who is the appointed project area warden will immediately notify the RWMC shift supervisor, the WCC, cold test pit subcontractors, DOE, and other appropriate parties as listed in Section 11.8. The FTL notification will describe the event and request emergency response resources as appropriate. After being informed of the event the emergency coordinator may elect to activate the RWMC command post. Once

the command post is declared operational all emergency response activities will be coordinated through the emergency coordinator. The specific actions to be taken in response to emergency alarms are described in Section 11.5. Examples of these types of events include but are not limited to those listed below:

- Fire that is burning beyond an incipient stage and requires a response from the INEEL Fire Department to mitigate
- Hazardous material spill at the project that cannot be immediately contained or controlled
- Serious injury or rescue of a worker or workers.

11.1.3 Events Requiring Radioactive Waste Management Complex and Cold Test Pit Evacuation

No credible scenarios could or would result in the total evacuation of the RWMC from a cold test pit emergency event. In the event that an RWMC emergency requires the cold test pit to evacuate, the FTL or designee will be notified by the ERO to evacuate all cold test pit personnel. The RWMC emergency coordinator will be responsible for ordering a total area evacuation protective action that may include the cold test pit areas.

Note: When an evacuation is called for by the emergency coordinator, the FTL will be the designated project area warden who will ensure that the ERO personnel accountability leader has been notified that all cold test pit workers have been evacuated and personnel accountability is completed.

11.2 Emergency Facilities and Equipment

Emergency response equipment that is maintained at the site includes the items described in Table 10. The INEEL Fire Department maintains an emergency HAZMAT response van that can be used to respond to an event or emergency at the cold test pit. Fire department personnel are also trained to provide immediate HAZMAT spills, rescue, and medical services. At least two people with current medic or first-aid training will be present at the project to render first aid as required. Cold test pit HSO and IH personnel may assist with emergency decontamination efforts.

11.2.1 Cold Test Pit Emergency Equipment

The people responsible for certain actions during an emergency are listed in Table 13. Emergency response equipment that will be maintained at the cold test pit as required by the level of hazards associated with a particular treatability study is described in Table 10.

Fire extinguishers, a spill kit, and a first-aid kit are minimum requirements for the cold test pits. In addition, portable eyewash equipment and safety showers are provided if recommended by the IH and if chemical hazards are present. This equipment will be deployed at the support trailer or readily available in the equipment development area (EDA). The location of the nearest emergency response team is the RWMC. The route to the CFA infirmary from the cold test pit areas is shown in Figure 6.

Emergency drills are routinely conducted for the RWMC. Warning sirens are also tested. The cold test pit EAC will keep all cold test pit personnel aware of drills and warning system tests as appropriate.

11.3 Emergency Communications

In the event of an emergency, capability will be required to summon INEEL emergency response resources, to immediately notify site personnel, and to inform others of site emergencies.

Table 13. Responsibilities during an emergency.

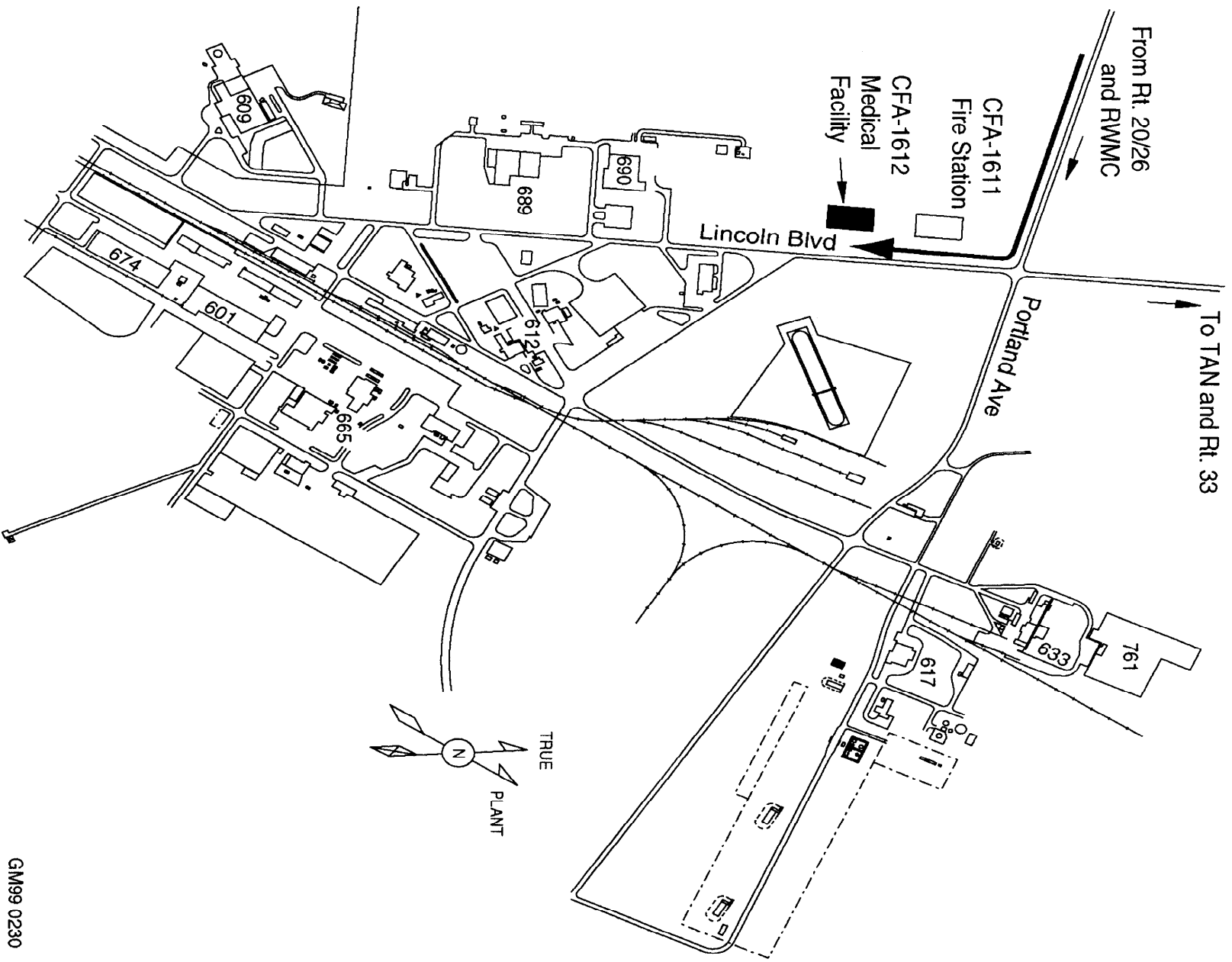
Responsible Person	Action assigned
Field team leader	Contact the INEEL site emergency telephone number or the Warning Communications Center (WCC) and the Radioactive Waste Management Complex (RWMC) shift supervisor
Field team leader	Signal evacuation or take-cover
Field team leader	For those sites located in the field, act as point of contact
Field team leader or health and safety officer	Provide first aid
Field team leader	Report occupational injuries or illnesses to the Occupational Medical Program (OMP)
Field team members	Extinguish fires (incipient fires only)
Field team leader	Report any fires to the Idaho National Engineering and Environmental Laboratory (INEEL) Fire Department
Field team members	Contain spills (within level of training)
Field team leader	Report spills to the INEEL spill notification team
Field team leader	Assemble industrial safety and industrial hygiene
Field team leader	Contact the shift supervisor or facility area director
Field team leader	Contact the emergency action manager or the emergency coordinator

Communications equipment at the task site will be a combination of pagers, radio (call sign KID 240 or talk-group INEEL on-scene commander [OSC]), and telephones (e.g., mobile, cellular, or facility).

The following actions will be taken for emergency situations:

- Call 777, the INEEL site emergency telephone number or 526-515, the WCC. Once the initial call is made the FTL or HSO may use the E-NET radio to update emergency response personnel.
- Notify site personnel to evacuate to the designated marshalling or take-cover area by use of a hand-held air horn with intermittent blasts.
- Notify site personnel to take cover using a continuous blast of the air horn.
- Contact the RWMC shift supervisor or facility manager by radio or telephone.
- The RWMC shift supervisor will contact the RWMC ERO.

Note: The emergency action manager (EAM) will be contacted for work at RWMC. The CFA EAM backs up any affected emergency coordinator or EAM by providing logistical support. Technical support personnel for ER programs must be contacted immediately by the on-duty CFA EAM or the WCC.



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Figure 6. Map showing route to Central Facilities Area medical facility and fire stations, site and facility evacuation routes, and evacuation pickup locations.

Site personnel should provide the following information, as available, when communicating emergency information to the INEEL site emergency telephone number, the WCC, or the POC:

- The caller's name, telephone number, radio call sign and pager number
- Exact location of the emergency
- Nature of the emergency, including time of occurrence, current site conditions, and special hazards in the area
- Injuries if any including number of injured, types of injuries, conditions of injured
- Additional information as requested.

11.4 Emergency Response Roles and Responsibilities

11.4.1 Emergency Response Organizations

The INEEL ERO structure is based on the incident command system (ICS). The ICS is an emergency management system designed for use from the time an incident occurs and will be responded to until it is terminated. The system consists of procedures for controlling personnel, facilities, equipment, and communications. It allows for activating emergency response resources in a graded approach depending on the nature and seriousness of the event. At the cold test pits, the ICS is implemented as a chain of command operating on three basic levels: (1) the OSC, (2) the RWMC command post, and (3) the INEEL Emergency Operations Center.

11.4.1.1 On-Scene Commander. The OSC (as specified in PLN-114) has the tactical and command responsibility for the control of an emergency situation at the scene, a fire, HAZMAT response, and as a special rescue response. The senior fire department officer responding for the INEEL Fire Department fills this position. If the event is primarily a security incident, the senior responding protective forces officer will assume the duties of the OSC. In some instances the incident response team leader (IRTL) may function as the OSC until relieved by a higher tiered authority. The IRTL reports to the OSC who reports to the emergency coordinator. The incident response team acts at the first responder awareness level by providing initial-control personal-protective measures and incident assessment and mitigation as directed by the IRTL.

The project FTL and HSO as well as the designated replacement will be trained at the first responder awareness level and will take the following immediate actions:

- Understand the potential outcomes associated with an emergency when hazardous substances are present
- Understand what hazardous substances are and their associated risks in an incident
- Recognize the presence of hazardous substances in an emergency
- Identify the hazardous substances if possible
- Assume the roles of a first responder at the awareness level
- Realize and understand the need for additional resources.

11.4.1.2 Radioactive Waste Management Complex Command Post. The RWMC command post is the second tier of the emergency response line organization and will be headed by the emergency coordinator. The emergency coordinator will be responsible for all emergency response actions within the entire facility including advising the OSC. The command post will be activated for actual or potential emergencies or at the direction of the emergency coordinator. If the command post is activated in response to an event at the project then the project will send a representative to the command post to advise the emergency coordinator.

11.4.1.3 Emergency Operations Center. The Emergency Operations Center is the upper tier of the ERO and is headed by the INEEL emergency director. The emergency director will be responsible for all emergency response actions at the INEEL including advising the emergency coordinator. Cold test pit personnel do not normally provide direct support to the emergency operations center.

11.4.2 Project Personnel Involved in Emergencies

11.4.2.1 Field Team Leader. The FTL or the HSO will be responsible as the designated project first responder at the awareness level for initiating all requests for emergency services (e.g., fire and medical) and for notifying the facility shift supervisor of abnormal or potential abnormal events occurring on the project. The FTL or designee serves as the project area warden. In this capacity, the FTL will report the accountability for all employees when an emergency evacuation is called to the personnel accountability leader. Additionally the FTL will control the scene at the first responder awareness level until relieved by a higher tiered ICS authority at the scene to take control as the OSC. While maintaining control of the scene from a protected controlled distance, the FTL will maintain communication with the facility shift supervisor or the emergency coordinator when the system is in place.

11.4.2.2 Project Personnel. Every person at the project has a role to play during an event or INEEL emergency. Each employee must be constantly aware of potential problems or unexpectedly hazardous situations by immediately reporting these situations to the FTL or HSO. All employees are expected to watch out for their fellow workers, to report their concerns to the FTL, and to respond to emergency events as provided for in the HASP. Specific project personnel responsibilities are outlined in Table 14.

Table 14. Project notification responsibilities.

Activity	Title	Phone	Pager	Radio
Field team leader notifies:				
Fire department		777	—	KID 240
Warning Communication Center		6-1515	—	KID 240
Radioactive Waste Management Complex shift supervisor and emergency coordinator		6-2767	—	6-Net
For spills: environmental affairs spill team		—	6400	—
Waste Area Group (WAG) 7 project manager		6-3029	6451	—
Cold test pit U.S. Department of Energy Idaho Operations Office (DOE-ID) facility representative		6-5558	6901	—
WAG 7 project manager notifies:				
Environmental Restoration (ER) Program director		6-2945	—	—
ER Safety, Health, and Quality Assurance (SH&QA) manager		6-9566	5689	—

11.5 Emergencies, Recognition of Warnings, and Response

11.5.1 Emergency Recognition and Response

All task-site personnel should be constantly alert for signs of potentially hazardous situations, including signs and symptoms of chemical exposures or equipment failure or collapse. All personnel entering the cold test pit will be trained on the methods, signals, and alarms used to convey “EVACUATION” and “TAKE COVER” and on the expected responses. Cold test pit personnel will also be trained (during the training for this HASP) on the following immediate response actions:

- Assembling task-site personnel at the designated assembly point for the RWMC for an evacuation of the cold test pit.
- Summoning the INEEL emergency response by calling 777 (INEEL site emergency telephone number) or the WCC at 526-1515.
- Ensuring medic- or first-aid-trained individuals are available to provide care during accidents resulting in injury, and reporting any injury that requires transportation by ambulance to a medical facility by calling 777 or 526-1515.
- Ensuring task-site personnel extinguish any incipient fires using hand-held extinguishers and immediately reporting all fires by calling 777 or 526-1515.
- Ensuring cold test pit personnel limit exposure to hazardous conditions in cases of hazardous material spills by following and not exceeding the limitations of their training and qualification for HAZWOPER, summoning INEEL emergency response for large spills by calling 777 or 526-1515, and immediately contacting the environmental affairs spill response categorization and notification team for all spills (via Pager No. 6400).

If spills are small enough to be safely contained at the cold test pit, spill control will be handled by task-site personnel, who will take the following immediate spill-response actions:

- Evacuating and isolating the immediate area
- Seeking help from and warning others in the area
- Stopping the spill, if it can be done without risk (e.g., returning the container to the upright position, closing valve, and shutting off power)
- Providing pertinent information to the FTL, job-site supervisor, and the HSO
- Securing any ventilation paths and ensuring that IH or safety engineer surveys the area to determine the extent of a chemical spill as appropriate.

An emergency drill will be coordinated with INEEL Emergency Preparedness Department and conducted at the start of the treatability study within the cold test pits. The purpose of the drill will be to familiarize employees with their respective emergency response actions. Any radio or telephone communications that are included in this drill will be immediately preceded and followed with a statement that clearly identifies the situation as a drill to prevent an actual emergency response from being initiated by WCC. Additional drills may be conducted at the discretion of the project or the Emergency Preparedness Department. Each drill or actual emergency at the cold test pit will be followed by a critique and any deficiencies in the emergency plan that are identified will be corrected.

11.5.2 Alarms

Alarms and signals are used at the cold test pits and INEEL to notify personnel of abnormal conditions that require a specific response. Responses to these alarms are addressed in the general employee training. In addition to the alarms previously described, emergency sirens located throughout the RWMC serve as the primary means for signaling emergency TAKE COVER or EVACUATION protective actions. These emergency sirens may come from both cold test pit areas unless high noise equipment is operating. To better ensure personnel safety, the cold test pit has established a separate system of emergency signals based on hand-held air horns. These signals are described in Table 15. Actions to be taken by cold test pit personnel in response to TAKE COVER and LOCAL AREA EVACUATION alarms are described next.

11.5.2.1 Take Cover. Emergency conditions may require that all personnel take cover in the nearest building. A TAKE COVER protective action may be initiated as part of a broader response to an emergency situation and may precede an evacuation order. The order to TAKE COVER is usually announced by activating a hand-held air horn. The signal to take cover will be a continuous blast that can be heard throughout the cold test pit areas. Remember, STEADY = STAY at the cold test pit. But the order to TAKE COVER can also be given by word of mouth, radio, or voice paging system. When ordered to TAKE COVER, project personnel will place the site in a safe condition as appropriate and then seek shelter in the support trailer. Vehicles may be used for shelter if there are no buildings nearby. Eating, drinking, and smoking are not permitted during TAKE COVER conditions.

Table 15. Project internal and backup emergency air-horn signals.

Device or Communication Method	Signal	Associated Response
Air horns (blasts)	One continuous blast.	Take cover.
	Multiple short blasts (until all personnel react and begin evacuation).	Local area evacuation. Emergency evacuation of immediate work area. Proceed to support trailer or project assembly area.
	Three long blasts.	Return to site—all clear.

During radiation or HAZMAT releases, extreme weather conditions, or other emergency events, the cold test pit safety engineer, IH, and HSO personnel will assist and direct all workers exiting from contamination areas during a TAKE COVER alarm.

11.5.2.2 Local Area Evacuation. A local area evacuation will be the complete withdrawal of personnel from an EDA or exclusion zone but it does not require the complete evacuation of the entire cold test pit area. The order to evacuate can be given by word of mouth, radio, or voice paging system. When ordered to evacuate the local area project personnel will place the EDA in a safe condition as appropriate and then proceed along the specified evacuation route to the support trailer or assembly area designated for local area evacuations or as directed by the FTL. Eating, drinking, and smoking are not permitted during emergency evacuations.

11.5.3 Personnel Accountability and Area Warden

Project personnel are required to evacuate the site in response to TAKE COVER and LOCAL AREA EVACUATION alarms. In each case the project area warden will account for the people present on the site at the time the alarm was initiated. The FTL or designee serves as the area warden for the

project and completes the personnel accountability based on the sign-in roster used to control site access. As described next, the method used to report the results of the accountability process varies depending on the nature of the emergency event.

For total area evacuations, the RWMC command post will be activated and all personnel gather at the evacuation assembly area designated by the emergency coordinator. In this situation the project area warden reports the result of the accountability process to the RWMC personnel accountability leader.

The RWMC command post also will be activated for TAKE COVER alarms; however, personnel remain in the closest appropriate shelter. In this situation, a complete personnel accountability report will not be required but the cold test pit area warden should report the result of the accountability process to the RWMC command post or shift supervisor.

The RWMC command post is not usually activated for a cold test pit local area evacuation. In this situation, a complete personnel accountability report will not be required but the project area warden should report the result of the accountability process to the RWMC shift supervisor for the information of the RWMC facility manager.

11.5.4 Notifications

As directed by the office of the Secretary of Energy, the RWMC area director will be responsible for immediately notifying the DOE and local agencies off the INEEL Site of all significant abnormal events that occur at the cold test pits. This duty will be in addition to the notification requirements established in INEEL procedures for events that are categorized as emergencies or unusual occurrences. For this reason the project will immediately report all abnormal events that occur on the site to the cold test pit shift supervisor and to the WCC. The WCC will in turn notify the appropriate INEEL emergency response resources and other INEEL facilities. The cold test pit shift supervisor and the WCC share the responsibility for notifying the cold test pit facility manager, emergency coordinator, and area director as appropriate. Normally the FTL will be responsible for making the event notifications described above. The FTL may make additional notifications (as listed in Section 11.8) at the discretion of the project supervision.

The emergency coordinator will be the single POC between the project and the INEEL ERO and offsite people or agencies. The emergency coordinator will make all offsite notifications. The project notification responsibilities are listed in Table 16.

11.5.5 Evacuation Routes

Primary and secondary evacuation routes are maintained for the cold test pits, as shown in Figure 7. These routes may be used in response to a total cold test pit area evacuation as directed by the emergency coordinator. Copies of the evacuation routes will be posted at the site and in the cold test pit support trailers.

If the cold test pit sites are evacuated, personnel will assemble in the RWMC operations control building or as directed by the FTL. If a total area evacuation of the RWMC is ordered, then project personnel will relocate to the primary evacuation assembly area at the RWMC or as directed by the emergency coordinator.

Table 16. Cold test pit notification responsibilities.

Responsible Person or Organization		Phone	Pager	Radio
Field team leader or any task site personnel	Idaho National Engineering and Environmental Laboratory (INEEL) emergency response telephone number	777	—	KOK 130
Field team leader	Warning Communications Center	526-1515	—	KID 240
Field team leader	INEEL spill notification team for spills	—	6400	—
Field team leader	INEEL occupational medical program for occupational illness or injury	526-1596	—	—
Field team leader	Radioactive Waste Management Complex (RWMC) shift supervisor	526-2767	4428	—
Field team leader	RWMC site area director or landlord	526-4223	5270	—
Field team leader	RWMC emergency action manager or emergency coordinator	526-1767	5802	—
Field team leader or health and safety officer	Field operations manager	526-3238	—	—
Field team leader or project manager	RWMC U.S. Department of Energy (DOE) facility representative	526-5558	6901	—
Field team leader or health and safety officer	Environmental Restoration Safety, Health, and Quality Assurance (SH&QA) manager	526-9566	5689	—

11.6 Reentry and Recovery

11.6.1 Reentry

- Performing personnel search and rescues
- Responding to medic and first-aid needs
- Performing safe shutdown actions
- Addressing mitigating actions
- Evaluating and preparing damage reports
- Performing radiation and HAZMAT surveys.

Reentries will be carefully planned to ensure that personnel are protected from harm and to prevent initiating another emergency event. Reentry planning will be undertaken as a graded approach depending on the nature of the initiating event.

Evacuation Routes from the Cold Test Pit Areas

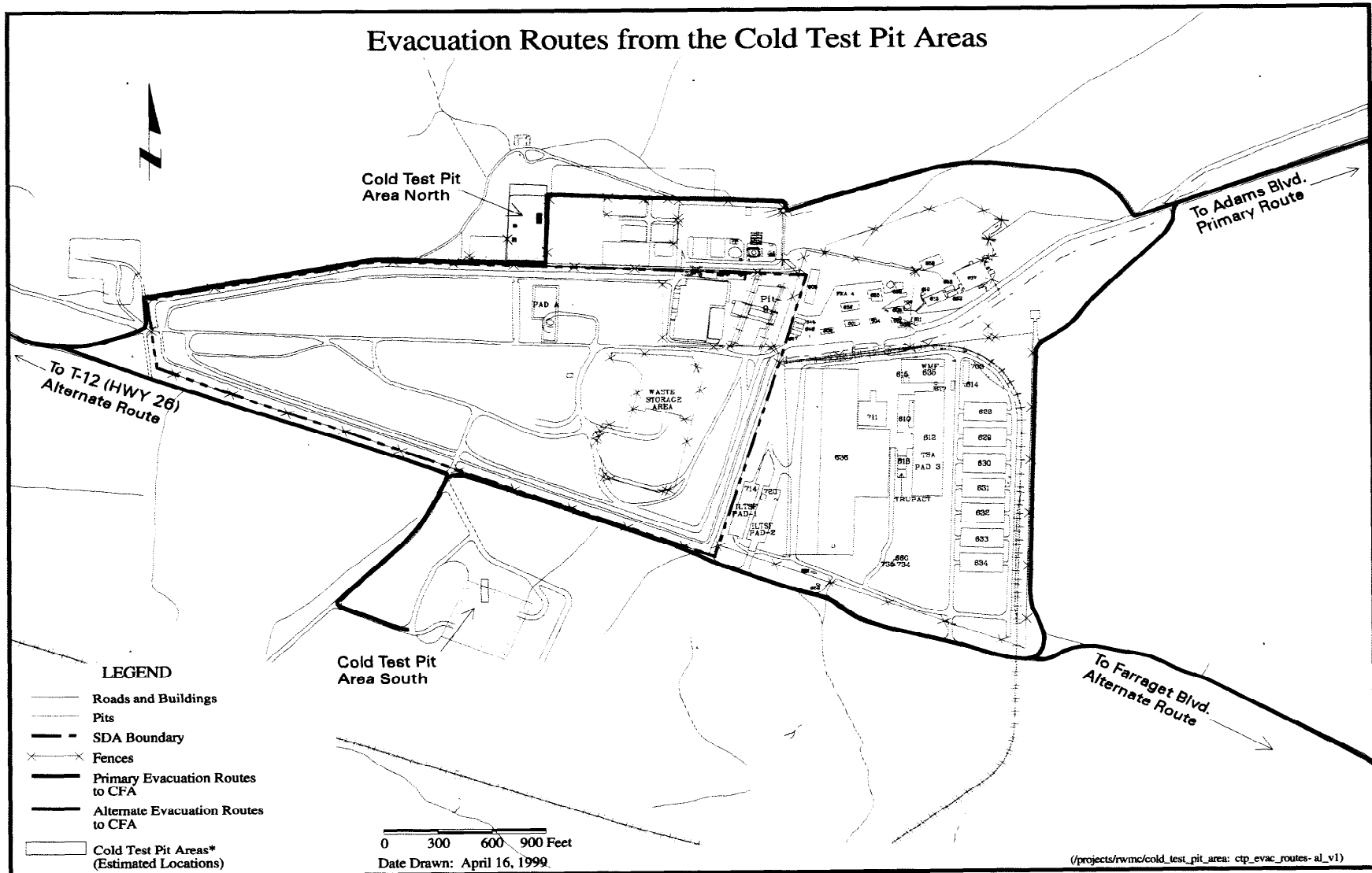


Figure 7. Cold test pit primary and secondary evacuation routes.

11.6.2 Recovery

After the initial corrective actions have been taken and effective control established, response efforts will shift toward recovery. Recovery is the process of assessing post-event or emergency conditions and developing a plan for returning to pre-event or pre-emergency conditions when possible and following the plan to completion. The emergency coordinator will be responsible for determining when an emergency situation is sufficiently stable to terminate the emergency and enter the recovery phase. The RWMC facility manager will appoint the recovery manager.

11.7 Critique of Response and Follow-up

A review and critique will be conducted following all emergency events, drills, and exercises at the INEEL. In some cases an investigation may be required prior to commencing recovery actions. For this reason care should be exercised to preserve evidence when appropriate.

11.8 Telephone and Radio Contact Reference List

The POCs for the project are listed in Table 17. This list will be posted at the entrance to the contamination reduction corridor and in site offices.

A map showing the route to the nearest medical facility, locations of nearby INEEL fire stations, site and facility evacuation routes, and evacuation pickup locations is provided in Figure 6.

11.9 Cold Test Pit Notification Responsibilities

11.9.1 Notifications During an Emergency

Notifications are used to alert task-site personnel to emergencies, to summon INEEL emergency response resources, and to inform others of task-site emergencies. Communications equipment at the cold test pits will be a combination of pagers, telephones (i.e., mobile, cellular, or facility), and radio. All emergency notifications must comply with MCP-2891, "Operational Emergency Notification to Off-Site Authorities." The RWMC emergency plan covers the cold test pit locations. The following will occur for emergency situations:

- The TAKE COVER signal inside the facilities will be a steady siren. For the cold test pits, a steady horn (air horn or vehicle horn) will signal take cover. The take cover hand signal for equipment operators during high noise conditions will be the chokehold signal. The take cover location where personnel will assemble in the event of a site-wide TAKE COVER will be as identified at the POD meeting.
- The EVACUATION signal will be an intermittent siren from the RWMC. At the cold test pits an intermittent hand-held air horn will signal evacuation. The location where personnel will assemble following an EVACUATION will be the RWMC operations control building.
- The FTL will be assigned as POC for the cold test pits. The assigned POC will have the capability to communicate with field workers at all times. The INEEL site emergency telephone number (777) or the WCC (526-1515) will be notified.
- The facility RWMC shift supervisor or facility manager will be notified.

Table 17. Project emergency point-of-contact list.

Contact Title	Contact Name	Phone Number or Radio Net	Pager Number
Warning communications center	—	777 or 526-1515 Radio: KID-240	—
Radioactive Waste Management Complex (RWMC) shift supervisor	Clinton E. Sisson	526-2767	4428
RWMC nuclear facility operations	Albert E. Millhouse	526-6932	5304
RWMC site area director	David M. Bright	526-4223	5270
RWMC operations supervisor	James R. Bishoff	526-2766	5307
Operational medical program	—	526-1596	—
First Aid (Central Facilities Area medical facility, CFA-1612)	—	777, or 526-2356	—
Fire and security	—	777	—
Waste Area Group 7 project manager	John M. Schaffer	526-3029	6451
Environmental Restoration (ER) -RWMC liaison	Richard L. Jones	526-3190	7914
ER Safety, Health, and Quality Assurance (SH&QA) manager	Charles Chebul	526-9566	5689
ER environmental compliance officer	Brent N. Burton	526-8695	7486
RWMC safety engineer	James F. Obrien	526-5179	6447
RWMC Environment, Safety, Health, and Quality Assurance (ESH&QA) department manager	Timothy L. Carlson	526-8062	5724
RWMC radiological control engineer	Randy D. Sayer	526-6619	5865
RWMC industrial hygiene	Brian M. Perkes	526-9358	6355
RWMC emergency planner	Gerald L. Gibeault	526-1767	5802
ER quality engineer	Robert G. Thompson	526-9618	4067
WAG 7 industrial hygiene	Charles Chebul	526-9566	5689
WAG 7 safety engineer	Kelly A. Wooley	526-2552	7368
ER cold test pit field team leader	Elden B. Thompson	526-7513	6770

The RWMC ERO will be notified. The POC will provide the following information as available when notifying the INEEL site emergency telephone number or the WCC:

- Informant's name, telephone number, pager number
- Exact location of the emergency
- Nature of the emergency, including time of occurrence, current task-site conditions, and special hazards in the area
- Injuries, including number of injured, types of injuries, conditions of injured personnel
- Additional information as requested.
- A copy of Table 16 "Cold test pit notification responsibilities," will be posted at each SZ and in the offices of those assigned notification responsibilities.

12. REFERENCES

- 29 CFR 1910.120, *Code of Federal Regulations*, Title 29, "Labor," Part 1910, "Occupational Safety and Health Standards," Section 1910.120, "Hazardous Waste Operations and Emergency Response."
- 29 CFR 1926.65, *Code of Federal Regulations*, Title 29, "Labor," Part 1926, "Safety and Health Regulations for Construction," Section 1926.65, "Hazardous Waste Operations and Emergency Response."
- 49 CFR 171.8, *Code of Federal Regulations*, Title 49, "Transportation," Part 171, "General Information, Regulations, and Definitions."
- 54 FR 29820, December 15, 1998, *Federal Register*, "National Oil and Hazardous Substances Pollution Contingency Plan."
- 54 FR 48184, November 21, 1989, *Federal Register*, "National Priorities List of Uncontrolled Hazardous Waste Sites; Final Rule."
- 42 USC § 6901 et seq., 1976, *United States Code*, "Resource Conservation and Recovery Act (Solid Waste Disposal Act)."
- 42 USC § 9601 et seq., 1980, *United States Code*, "Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA/Superfund)."
- U.S. Department of Energy Order 151.1A, 2000, "Comprehensive Emergency Management System," U.S. Department of Energy.
- U.S. Department of Energy Order 232.1A, 1997, "Occurrence Reporting and Processing of Operations Information," U.S. Department of Energy.
- U.S. Department of Energy Standard DOE-STD-1090-99, 1999, "Hoisting and Rigging," U.S. Department of Energy.
- ACGIH, 1998, *Threshold Limit Values Booklet*, American Conference of Governmental Industrial Hygienists.
- Becker, B. H., J. D. Burgess, K. J. Holdren, D. K. Jorgensen, S. O. Magnuson, and A. J. Sondrup, August 1998, *Interim Risk Assessment and Contaminant Screening for the Waste Area Group 7 Remedial Investigation*, DOE/ID-10569, U.S. Department of Energy, Idaho Operations Office, Idaho Falls, Idaho.
- Companywide Manual 14A, *Safety and Health—Occupational Safety and Fire Protection*, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.
- Companywide Manual 14B, *Safety and Health—Occupational Health*, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.
- Companywide Manual 15A, 2000, *INEEL Radiological Control Manual*, PRD-183, Rev. 6, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Companywide Manual 16, 2001, *Emergency Preparedness Base Plan-INEEL Emergency Plan/RCRA Contingency Plan*, PLN-114, Rev. 16, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Companywide Plan PLN-694, 2000, *Project Management Plan, Environmental Restoration Program Management*, Rev. 0, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

DOE-ID, 2000a, *U.S. Department of Energy, Idaho Operations Office Idaho National Engineering and Environmental Laboratory Pollution Prevention Plan*, DOE/ID-10333, Rev.0, U.S. Department of Energy Idaho Operations Office, Idaho Falls, Idaho.

DOE-ID, 2000b, *Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10 and Inactive Sites*, DOE/ID-10587, Rev. 6, U.S. Department of Energy Idaho Operations Office, Idaho Falls, Idaho.

DOE-ID, 1999, *Operable Unit 7-13/14 In Situ Grouting Treatability Study Work Plan*, DOE/ID-10690, U.S. Department of Energy, Idaho Operations Office, Idaho Falls, Idaho.

DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering and Environmental Laboratory*, U.S. Department of Energy Idaho Operations Office, U.S. Environmental Protection Agency Region 10, Idaho Department of Health and Welfare.

DOE-ID, 1987, *Consent Order and Compliance Agreement*, U.S. Department of Energy, Idaho Field Office; U.S. Environmental Protection Agency, Region 10; and the U.S. Geological Survey.

Farnsworth, R. K., D. J. Henrikson, R. A. Hyde, D. K. Jorgensen, J. K. McDonald, D. F. Nickelson, M. C. Pfeifer, P. A. Sloan, and J. R. Weidner, March 1999, *Operable Unit 7-13/14 In Situ Vittrification Treatability Study Work Plan*, DOE/ID-10667, U. S. Department of Energy, Idaho Operations Office, Idaho Falls, Idaho.

INEEL, 2000, *IAG-15 Interface Agreement Between Radioactive Waste Management Complex and Waste Area Group 7 Operable Unit 7-13/14 Treatability Studies Project*, Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Loomis, Guy G., James J. Jessmore, and Jerry R. Weidner, 2001, *Implementation Test and Field Test Plan for the Operable Unit 7-13/14 In Situ Grouting Treatability Study*, INEL/EXT-2000-00449, Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-153, 2001, "Industrial Hygiene Exposure Assessment," Rev. 4, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-231, 2000, "Logbooks for ER and D&D&D Projects," Rev. 4, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-255, 1999, "Hazardous Waste Operations and Emergency Response Activity Health and Safety Plans," Rev. 4., Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-432, 2000, "Radiological Personal Equipment," Rev. 8., Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-553, 2000, "Stop Work Authority," Rev. 4, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-584, 1997, "Flammable and Combustible Liquid Storage and Handling," Rev. 2, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2704, 2000, "Heat and Cold Stress," Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2714, 1997, "Safety Signs, Color Codes, and Barriers," Rev. 0, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2716, 2001, "Personal Protective Equipment," Rev. 5, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2719, 1998, "Controlling and Monitoring Exposure to Noise," Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2731, 2001, "Electrical Safety," Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2743, 2001, "Motor Vehicle Safety," Rev. 2, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2745, 1997, "Heavy Industrial Vehicles," Rev. 0, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2748, 1997, "Hazardous Waste Operations and Emergency Response, Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2749, 2001, "Confined Spaces," Rev. 2, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-2891, 2001, "Operational Emergency Notifications to Off-Site Authorities," Rev. 4, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-3003, 2000, "Performing Pre-Job Briefings and Post-Job Reviews," Rev. 9, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-3480, 2001, "Environmental Instructions for Facilities, Materials, and Equipment," Rev. 6, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-3562, 2000, "Hazard Identification, Analysis and Control of Operational Activities," Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-3571, 2000, "Independent Hazard Review," Rev. 3, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Management Control Procedure MCP-6205, 2001 "Subsurface Investigations," Rev. 2, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

NFPA, April 15, 2000, *Standard for Electrical Safety Requirements for Employee Workplaces*, NFPA 70E, National Fire Protection Association.

NIOSH, 1985, *Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities*, National Institutional of Occupational Safety and Health/Occupational Safety and Health Administration/United States Coast Guard/U.S. Environmental Protection Agency, DHHS (NIOSH) Publication No. 85-115.

Program Description Document PDD-1073, July 6, 2000, *Radiological Control Training and Qualification Program*, Rev. 0, Idaho National Engineering and Environmental Laboratory, Idaho Falls, Idaho.

Program Requirements Directive PRD-2021, 1997, "Powered Industrial Trucks," *Subcontractor Requirements Manual*, Idaho National Engineering and Environmental Laboratory, Lockheed Martin Idaho Technologies, Idaho Falls, Idaho.

Program Requirements Directive PRD-5051, 2001, "Chapter IX-Lockout and Tagout," Rev. 1, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Program Requirements Directive PRD-5101, 2001, "Portable Equipment and Handheld Power Tools," Rev. 0, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Standard STD-101, 2001, "Integrated Work Control Process," Rev. 12, Idaho National Engineering and Environmental Laboratory, Bechtel BWXT Idaho, LLC, Idaho Falls, Idaho.

Weidner, J. R., A. J. Sondrup, T. G. Kaser, and W. C. Downs, 1992, *Vapor Port Permeability*, Engineering Design File EDF ER-VVED-101, EG&G Idaho Inc., Idaho Falls, Idaho.

Wood, T. R., and G. T. Norrell, 1996, *Integrated Large-Scale Aquifer Pumping and Infiltration Tests, Groundwater Pathways OU 7-06, Summary Report*, INEL-96/0256, Rev. 0, Idaho National Engineering and Environmental Laboratory, Lockheed Martin Idaho Technologies Company, Idaho Falls, Idaho.